

REMARKS

This paper responds to the Office Action dated April 06, 2005. Claims 23-56 remain pending in the Application, and stand rejected by the Examiner. Applicants traverse the instant rejections.

Examiner's Interview

Applicants' representative, Joseph M. Sauer, thanks Examiner Lau for the courtesies extended during the telephone interview on May 31, 2005. During the interview, the pending claims and cited Satake reference (U.S. 6,198,254) were discussed. The remarks contained herein further summarize the interview.

Claim Rejections

Claims 23, 25, 26, 31-37, 39-41, 44, 46-49, 51, and 54-56 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Satake. Claims 24, 38 and 50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Satake in view of Branham (U.S. 4,297,639), and claims 27-30, 42, 43, 45, 52 and 53 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Satake in view of Weiss (U.S. 5,949,219). As discussed with the Examiner, the Satake reference does not teach the limitations of the pending claims because, among other distinctions, the Satake reference does not teach, disclose or suggest estimating a usable battery capacity in a mobile device based on a voltage at which an operation of the mobile device is shut off.

The Satake reference discloses a system and method for estimating battery capacity in a hybrid electric vehicle, taking into account the effects of "gassing." (See, Satake, col. 2, line 44 - col. 3, line 35). As explained in Satake, "batteries reach a gassing voltage (a voltage at which generation of gasses becomes active), when the charge capacity exceeds 90%." (Satake, col. 2, lines 35-37). The problem addressed by the Satake reference is to take the effects of gassing into consideration when calculating the

remaining capacity of a battery. (See, Satake, col. 2, lines 38-41). This is wholly unrelated to the invention set forth in the claims of the instant Application.

The invention set forth in pending claim 23 estimates a usable battery capacity based on a present battery capacity and an operational threshold capacity. As recited in claim 23, the operational threshold capacity is ultimately determined from a loaded operational threshold voltage of the mobile device, which is a battery voltage below which an operation of the mobile device will shut off. In one example, as recited in claim 24, the loaded operational threshold voltage may be a voltage below which a radio in the mobile device cannot properly operate and is shut off. Put another way, the result of the method recited in claim 23 is to determine the capacity (usable battery capacity) of a battery to operate before reaching a voltage at which some operation of the mobile device (e.g., the radio) will shut off (loaded operational threshold voltage), and not to determine the total energy remaining in the battery as described in the Satake reference. For at least this reason, Applicants submit that claim 23 is patentably distinct from the Satake reference, and is in condition for allowance. Pending claims 24-36 are each ultimately dependent on claim 23, and are thus also in condition for allowance.

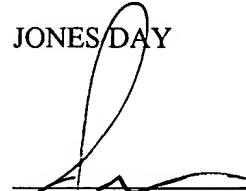
Rejected independent claims 37 and 48 include similar limitations, and are therefore patentable over the Satake reference for at least the same reasons as claim 23. Specifically, claim 37 recites the method step of estimating an estimated capacity for a predetermined feature of a battery operated device as a difference between a shut off capacity and a battery capacity, the predetermined feature being operable when the battery is above the shut off voltage. Claim 48 recites a mobile device that includes a battery estimation program that is configured to perform operations similar the method steps recited in claim 23. Applicants therefore contend that claims 37 and 48 are also patentable over the Satake reference, and are in condition for allowance. Claims 38-47 and 49-56 are each ultimately dependent on one of claims 37 or 48, and are thus also in condition for allowance.

Conclusion

For the above reasons, Applicants respectfully submit that the pending claims are allowable. The Examiner is therefore respectfully requested to pass this case to issue.

Respectfully submitted,

JONES/DAY



Joseph M. Sauer (Reg. No. 47,919)
Jones Day
North Point, 901 Lakeside Avenue
Cleveland, Ohio 44114
(216) 586-7506